UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 19 2015

Mr. Ron Gore
Chief
Air Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, Alabama 36130

Dear Mr. Gore:

Thank you for submitting the state of Alabama's 2015 Ambient Air Monitoring Network Plan (Network Plan) dated July 22, 2015. The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10.

The U.S. Environmental Protection Agency understands that the Alabama Department of Environmental Management (ADEM) provided the public a 30-day review period for reviewing the Network Plan and several comments were received and forwarded to the EPA. The EPA has reviewed the Network Plan, the public comments, and the ADEM's response to comments.

With this letter, the EPA is approving ADEM's Network Plan with one exception. The EPA does not approve the request for a national ambient air quality standard (NAAQS) exclusion for data associated with the $PM_{2.5}$ federal equivalent method (FEM) monitor at the North Birmingham site (AQS ID 01-079-0023). After analyzing the data from monitors in the area, the EPA considers the data from the North Birmingham monitor to be comparable to both the annual and 24-hour $PM_{2.5}$ NAAQS. The rationale for our position is included in "Proposed Monitoring Network Changes" section of the enclosure.

In the enclosure, we have provided comments on the current Network Plan as well as considerations for your future monitoring network. Please let us know if you have any questions about these comments.

Thank you for your work with us to monitor air pollution and promote healthy air quality in Alabama. If you have any questions or concerns, please contact Gregg Worley at (404) 562-9141 or Darren Palmer at (404) 562-9052.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides and Toxics Management Division

Enclosure

cc: Jonathan Stanton, Director
Jefferson County Department of Health

Daniel E. Shea, Director
Huntsville Department of Natural Resources

CY 2015 State of Alabama Ambient Air Monitoring Network Plan
U.S. EPA Region 4 Comments and Recommendations

This document contains U.S. EPA comments and recommendations on the state of Alabama's 2015 ambient air monitoring network plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O_3), particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO) and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries, as defined by the U.S. Office of Management and Budget's (OMB) July 1, 2014, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O_3, $PM_{2.5}$, and PM_{10}, only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs containing an urban core of 50,000 or more population. OMB currently defines 13 MSAs in the state of Alabama. These MSAs and the respective July 1, 2014, population estimates from the U.S. Census Bureau are shown in Table 1.

Table 1: Metropolitan Statistical Areas and Populations

MSA Name	Population
Anniston-Oxford-Jacksonville, AL	115,916
Auburn-Opelika, AL	154,255
Birmingham-Hoover, AL	1,143,772
Columbus, GA-AL	314,005
Daphne-Fairhope-Foley, AL	200,111
Decatur, AL	153,084
Dothan, AL	148,095
Florence-Muscle Shoals, AL	147,639
Gadsden, AL	103,531
Huntsville, AL	441,086
Mobile, AL	415,123
Montgomery, AL	373,141
Tuscaloosa, AL	237,761

Proposed Monitoring Network Changes

In its response to the Network Plan submitted by ADEM in 2014, EPA approved several changes to ADEM's monitoring network that have since been implemented. These changes are summarized in Table 2 below.

Table 2: EPA Approved Changes from 2014 Network Plan

AQS Site ID	Pollutant	Monitor Type	Action Taken
01-073-1003	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
01-073-1005	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
01-073-6002	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
01-073-6004	PM_{10}	SLAMS	Discontinued Low Volume PM_{10}
01-073-2059	NO_2, CO, $PM_{2.5}$	SLAMS	Established Near-road NO_2
01-097-0016	PM_{10}	SLAMS	Discontinued PM_{10} Site

EPA approved the elimination of PM_{10} monitoring at the Fairfield and McAdory sites listed above (AQS IDs 01-073-1003 and 01-073-1005, respectively) because these sites measured the lowest PM_{10} concentrations in the Birmingham MSA and because after their shut down the Jefferson County Department of Health (JCDH) would still operate more than the required number of monitors for the MSA.

The Tarrant and Shuttlesworth sites (AQS ID 01-073-6002 and 01-073-6004) maintain regulatory PM_{10} continuous monitoring. The Shuttlesworth site is the PM_{10} maximum concentration site for the area. The EPA requests that the Jefferson County Department of Health (JCDH) change the monitoring objective to reflect this by December 31, 2015. Finally, the EPA requires that the JCDH begin reporting the PM_{10} continuous data to EPA's AirNow network effective January 1, 2016. We request that the JCDH let the EPA know if it will be unable to meet this deadline.

The JCDH discontinued the $PM_{2.5}$ special purpose monitor at the Shuttlesworth site (AQS ID 01-073-6004) at the end of August 2014. Forty CFR §58.20 gives agencies the flexibility to conduct short term monitoring, like the monitoring JCDH conducted at Shuttlesworth, without the data being used for regulatory decision making. The EPA understands that, while not required, the JCDH is considering conducting special purpose $PM_{2.5}$ monitoring using a continuous, tapered element oscillating microbalance (TEOM) $PM_{2.5}$ monitor at Shuttlesworth and reporting the data to AirNow.

It was noted in the 2014 Network Plan that Pelham High School representatives in Shelby County, Alabama requested that the monitor on their property (AQS ID 01-117-0006) be moved to an alternate location on the same property. At the time of our response last year, it was EPA's understanding that ADEM was working on an agreement with the school to establish power at the alternate location and move the monitor before the end of calendar year 2014. In this year's plan, ADEM stated that a suitable location was not found and that the monitor was shut down in June 2015 since it measured the lowest concentrations in the area. This shut down of a SLAMS monitor was not approved by the EPA as required in 40 CFR §58.14. Because this monitor has had the lowest design values of all the $PM_{2.5}$ monitors in the Birmingham MSA since the 2011-2013 period and that the minimum monitoring requirements for the MSA continue to be met, EPA is retroactively approving its shut down. However, we want to caution you that in the future you should submit shut down requests in advance. In doing so you avoid the possibility of having EPA require that a site be reestablished.

Proposed monitoring network changes are found on Pages 6 and 7 of the Network Plan (see Table 3). No changes were proposed to the City of Huntsville's air monitoring network other than the discontinuation of the chemical speciation monitor that was defunded by the EPA. However, during our review we determined that the City of Huntsville's local agency will need to install a collocated PM_{10} sampler at one of its current sites. The rationale for this determination are included in the "PM_{10} Monitoring Requirements" section below.

Table 3: Proposed Changes in the 2015 Network Plan

AQS Site ID	Pollutant	Monitor Type	Action Taken	EPA Comments
01-089-0014	$PM_{2.5}$ Speciation	CSN	Shutdown	Approved, monitor defunded
01-101-1002	$PM_{2.5}$ Speciation	CSN	Shutdown	Approved, monitor defunded
01-117-0006	$PM_{2.5}$	SLAMS	Shutdown	Approved, low design value
01-073-6004	CO	SLAMS	Shutdown	Approved at end of 2015

The JCDH proposed to discontinue CO monitoring at the Shuttlesworth site (AQS ID 01-073-6004) at the end of 2015. The CO monitor is a long term, source-oriented monitor and has been measuring very low concentrations since 2010 after the mineral wool production facility was shut down at the Walter Energy facility. This monitor meets the requirements for discontinuation per 40 CFR §58.14(c)(1) and (2). Three CO monitoring sites will remain in Jefferson County (AQS ID 01-073-0023, 01-073-1003, and 01-073-2059). EPA will require the JCDH to restart CO monitoring efforts at the Shuttlesworth site should future CO emissions at the facility significantly increase.

A waiver request was included in this year's plan for a NAAQS exclusion of data from the $PM_{2.5}$ continuous federal equivalent method (FEM) sampler located at the North Birmingham site (AQS ID 01-073-0023). Based on the statistical summary from EPA's FEM Comparability Assessment tool (attached), the FEM data are considered comparable to both the daily and annual $PM_{2.5}$ NAAQS. As a result, the EPA cannot approve the waiver request. We are willing to have further discussions with you about our review or to reevaluate this request once all 2015 data have been reported.

Air Quality Index (AQI) Reporting
40 CFR §58.50

AQI reporting is required in MSAs with populations over 350,000. Four MSAs in Alabama are required to report an AQI: Birmingham, Huntsville, Mobile, and Montgomery. The state's Network Plan on Page 6 contains links to the ADEM, JCDH and Huntsville Department of Natural Resources Web sites where this information can be obtained. This satisfies the AQI reporting requirement for the state.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, 3.0

The state is required to have one NCore site. The NCore site must measure, at a minimum, $PM_{2.5}$ particle mass using continuous and integrated/filter-based samplers, speciated $PM_{2.5}$, $PM_{10-2.5}$ particle mass, O_3, SO_2, CO, NO/NOy, wind speed, wind direction, relative humidity, and ambient temperature. NCore sites in CBSAs with populations of 500,000 people (as determined in the latest Census) or greater are also required to measure Pb either as Pb-TSP or Pb-PM_{10}. The North Birmingham site (AQS ID 01-073-0023) was approved as the state's NCore site by OAQPS on October 30, 2009 and currently meets all requirements for the state.

O_3 Monitoring Requirements
40 CFR Part 58, Appendix D, Table D-2

Region 4 has determined that the O_3 monitoring network outlined in the Network Plan meets the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-2 for all MSAs.

CO Monitoring Requirements
40 CFR, Part 58, Appendix D, 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, 4.2. This section requires CBSAs with populations over one million to operate one CO monitor collocated with a near-road NO_2 monitor. Forty CFR §58.13(e)(2) specifically requires the monitor be operational by January 1, 2017. This requirement is already being met for the Birmingham CBSA by the CO monitor at the Arkadelphia near-road site (AQS ID 01-073-2059). CO monitoring is also a requirement for the NCore network and a CO monitor is located at the state's only NCore site in Birmingham (AQS ID 01-073-0023).

Additionally, we have determined that the CO monitor located at the Fairfield site (AQS ID 01-073-1003) in Jefferson County is the maximum concentration site for the Birmingham CBSA. We request the JCDH make this change to the monitoring objective for that monitor by December 31, 2015.

In summary, the CO monitoring network outlined in the Network Plan meets the minimum requirements for all CBSAs.

NO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, 4.3

Ambient air monitoring network design criteria for NO_2 are found in 40 CFR Part 58, Appendix D, 4.3. There are three types of required NO_2 monitoring: near-road, area-wide, and Regional Administrator. These types of NO_2 monitoring are described in sections 4.3.2, 4.3.3, and 4.4.4, respectively.

The Birmingham area is the only CBSA required to operate a near-road NO_2 monitoring station in Alabama. The JCDH operates a NO_2 monitor at the Arkadelphia near-road site (AQS ID 01-073-2059) to meet this requirement. The Arkadelphia near-road monitoring site was approved in the EPA's response to Alabama's 2013 Network Plan.

The Birmingham area is the only CBSA in Alabama required to operate an area-wide NO_2 monitoring station. The JDHC operates a NO_2 monitor at the North Birmingham NCore site (AQS ID 01-073-0023). Thus, the requirement for area-wide NO_2 monitoring is met.

No monitoring in Alabama have been designated as Regional Administrator NO_2 monitoring sites. There is no deficiency with this requirement. The full list of NO_2 monitors identified by the Regional Administrators can be found on EPA's website at http://www.epa.gov/ttnamti1/svpop.html

All of the requirements for NO_2 monitoring are met for the Birmingham CBSA and no other CBSA in Alabama is required to monitor for NO_2 at this time.

SO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, 4.4

Ambient air monitoring network design criteria for SO_2 are found in 40 CFR Part 58, Appendix D, 4.4. This section requires that "The population weighted emissions index (PWEI) shall be calculated by states for each core based statistical area (CBSA)." As a result, the SO_2 monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is of the following site types: population exposure, maximum

concentration, source-oriented, general background, or regional transport. An SO_2 monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, 4.4. At this time, the Birmingham and Mobile CBSAs are required to have two and one SO_2 monitors, respectively. The SO_2 monitoring network design outlined in the Network Plan meets the minimum requirements.

EPA finalized the SO_2 Data Requirements Rule (DRR) (see 80 *Federal Register*, No. 162, August, 21, 2015). This rule will require characterization of the air quality near sources with SO_2 emissions greater than 2,000 tons per year by conducting ambient air monitoring or modeling. We encourage your agency to begin having conversations with affected sources in your state to determine an agreed upon approach for meeting the DRR requirements. By January 15, 2016, ADEM must submit a final list of sources to EPA Region 4 identifying the sources in the state around which SO_2 air quality must be characterized. For sources that ADEM decides to evaluate using ambient air monitoring data, new site proposals must be included in the 2016 Network Plan. The location of these monitoring sites should be selected using the process outlined in the SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document[1].

Pb Monitoring Requirements
40 CFR Part 58, Appendix D, 4.5

Forty CFR Part 58, Appendix D, 4.5 requires that "At a minimum, there must be one source-oriented SLAMS [State and Local Air Monitoring Station] site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year [tpy] and from each airport which emits 1.0 or more tons per year…" Monitoring is ongoing as required near the Sanders Lead Company in Troy, Alabama. Pb monitoring is also ongoing at the North Birmingham NCore site. However, we have identified one potential deficiency in the Pb source monitoring network. Based on the most current emissions data available, the 2011 National Emissions Inventory (NEI), the Anniston Army Depot emits 1.79 tpy of Pb. Pb source monitoring waivers are required by 40 CFR Part 58, Appendix D, Section 4.5 and are to be renewed in each 5-year network assessment. There was no discussion in either the Network Plan or the network assessment regarding whether monitoring is appropriate at this facility or whether the state is requesting a waiver of monitoring requirements. The state is requested to submit an addendum to the 5-year network assessment by December 31, 2015, addressing these monitoring requirements for this facility. If compelling documentation in support of a waiver of the monitoring requirements cannot be provided, then the state will need to provide a schedule for when Pb source monitoring will be established. Monitoring should begin no later than December 31, 2016. We will work with your agency as necessary to determine the most appropriate location for ambient air monitoring around the facility.

Other than this one potential deficiency, the Pb monitoring network described in the state's Network Plan meets all of the design criteria of 40 CFR Part 58.

[1] SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document. U.S. EPA Office of Air Quality Planning and Standards Air Quality Assessment Division, Draft December 2013.
http://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

PM_{10} Monitoring Requirements
40 CFR Part 58, Appendix A, 3.3.1
40 CFR Part 58, Appendix D, Table D-4

Region 4 has determined that the PM_{10} monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-4 for all MSAs. However, the collocation requirements for manual PM_{10} monitors are not being fully met for all areas. Collocation requirements apply to each PQAO and are based on the sampling methods employed. The City of Huntsville's local agency will officially become its own PQAO on January 1, 2016, and must meet the collocation requirements separate from the state. While the Old Airport site (AQS ID 01-089-0014) in Huntsville does have a collocated manual PM_{10} monitor, no concentration data from that monitor has been reported to EPA's Air Quality System. They must begin reporting these collocated sampling data effective January 1, 2016. Please be sure to note this change in the Network Plan to be submitted in 2016.

$PM_{2.5}$ Monitoring Requirements
40 CFR Part 58, Appendix A, 3.2.5
40 CFR Part 58, Appendix D, Table D-5

Region 4 has determined that the $PM_{2.5}$ monitoring network outlined in the Network Plan meets the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-5 for all MSAs. The $PM_{2.5}$ collocation requirement found in 40 CFR Part 58, Appendix A, 3.2.5.2 for manual reference and equivalent methods collocated $PM_{2.5}$ monitoring is also met.

$PM_{2.5}$ Near-road Monitoring Requirement
40 CFR Part 58, Appendix D, 4.7.1(b)(2)

Regulatory requirements in 40 CFR Part 58, Appendix D, 4.7.1(b)(2) require that "CBSAs with a population of 1,000,000 or more persons, at least one $PM_{2.5}$ monitor, is to be collocated at a near-road NO_2 station." The $PM_{2.5}$ monitor at the Arkadelphia near-road site (AQS ID 01-073-2059) in Birmingham fulfills this requirement.

$PM_{2.5}$ Continuous Monitoring Requirements
40 CFR Part 58, Appendix D, 4.7.2

Regulatory provisions for continuous $PM_{2.5}$ monitoring require that "The state, or where appropriate, local agencies must operate continuous $PM_{2.5}$ analyzers equal to at least one-half (round up) the minimum required sites listed in Table D--5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM, Federal Equivalent Method (FEM), Approved Regional Method (ARM) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies." After review of the Network Plan, Region 4 has determined that the $PM_{2.5}$ continuous monitoring network meets or exceeds the minimum monitoring requirements in all of the MSAs in the state.

$PM_{2.5}$ Background and Transport Sites
40 CFR Part 58, Appendix D, 4.7.3

40 CFR Part 58, Appendix D, 4.7.3 requires that "Each state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background levels and at least one $PM_{2.5}$ site to monitor for regional

transport." The 2015 Network Plan identifies the Crossville site (AQS ID 01-149-1003) in Dekalb County as a rural background site, and the Ashland site (AQS ID 01-027-0001) in Clay County as a regional transport site. Regulatory FRM monitors are operated at these two sites. ADEM has satisfied the requirements for regional background and transport sites.

$PM_{2.5}$ Chemical Speciation Network (CSN)
40 CFR Part 58, Appendix D, 4.7.4

The EPA conducted an assessment of the CSN in an effort to optimize the network and create a network that is sustainable going forward. As a result of this assessment, the EPA defunded a number of monitoring sites, eliminated the CSN $PM_{2.5}$ mass measurement, reduced the frequency of carbon blanks, reduced sample frequency at some monitoring sites, and reduced the number of icepacks in shipment during cooler months of the year. As noted in the Network Plan, the following CSN monitoring sites in Alabama were defunded and have been discontinued: the Huntsville Old Airport site (AQS ID 01-089-0014) and the Montgomery MOMS site (AQS ID 01-101-1002).

The remaining CSN network, with sites in Birmingham and Phenix City, AL, meets the requirements and no other changes to the CSN network are being approved at this time.

Photochemical Assessment Monitoring Station (PAMS)
40 CFR Part 58, Appendix D, 5.0

With the promulgation of a new 0_3 NAAQSs on October 1, 2015, the EPA also finalized changes to PAMS program. By June 1, 2019, the NCore site in Birmingham will be required to implement PAMS monitoring. While the EPA recognizes there are several implementation challenges to work through, we will work closely with ADEM and JCDH to minimize the burden of implementing this new monitoring program. At this time, however, there is no PAMS requirement for the state of Alabama.

Other Concerns

On Page 10 of the Network Plan the ADEM indicates that 40 CFR Part 58, Appendix E siting criteria are being met at all sites. However, no evidence of that was provided. Because most of these sites are used in regulatory decision-making, evaluating the conditions at these monitoring sites on an ongoing basis is critically important to ensure that the data collected are of sufficient quality. EPA requests that the ADEM include in next year's plan recent pictures of all sites with a statement indicating: that the siting criteria for each site have been evaluated, the date on which the evaluation occurred, and whether the sites meet or do not meet the current requirements. If sites do not meet the current requirements, the ADEM should include a statement on the corrections that need to be made and a schedule of when these corrections will be made. If you would like to see examples of how other agencies are meeting this requirement in the context of their annual Network Plans, we can share them with you.